CLAIM AMENDMENTS

IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

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This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. **(Currently Amended)** A sensor for detecting an infrared absorbing subject gas in a gas mixture, comprising:

a sensor chamber being generally in the shape of a hollow tube;

an infrared radiation source at a first end of the sensor chamber, operable to generate a beam of infrared radiation along the length of the chamber;

a first filter operable to receive a portion of the beam of infrared radiation and passing a wavelength of radiation known to be attenuated by transmission through the subject gas;

a second filter operable to receive a second portion of the beam of infrared radiation and passing a wavelength of radiation known to be not significantly attenuated by transmission through the subject gas;

wherein the filters are arranged immediately adjacent each other to form a cross-sectional ~~polygon~~ closed-shaped geometry having an inner filter and an outer filter;

a chopper operable to selectively and in succession block and pass radiation from the first filter and the second filter, the chopper comprising a stationary array of light modulating elements that are controllable in two sections to alternately block and pass the radiation;

wherein the sections of the array have the same geometry as the inner and outer filter; and

an infrared detector for detecting radiation passed through the chopper.

2. (Previously Amended) The sensor of Claim 1, wherein the geometry is generally circular .

3. (Previously Amended) The sensor of Claim 1, wherein the geometry is generally rectangular .

4. (Cancelled)

5. (Cancelled)

6. (Previously Amended) The sensor of Claim 1, wherein the outer portion is annular relative to the inner portion.

7. (Original) The sensor of Claim 1, wherein the filters are equidistant from the infrared radiation source.

8. (Original) The sensor of Claim 1, wherein the first filter is sensitive to a wavelength that attenuates radiation through carbon dioxide.

9. (Original) The sensor of Claim 1, wherein the second filter is sensitive to a wavelength of about 3.9 micrometers.

10. (Original) The sensor of Claim 1, wherein the first filter is sensitive to a wavelength that attenuates radiation through water vapor.

11. (Original) The sensor of Claim 1, wherein the first filter is sensitive to a wavelength that attenuates radiation through gaseous ammonia.

12. (Original) The sensor of Claim 1, wherein the radiation source is an incandescent source.

13. (Original) The sensor of Claim 1, further comprising a collimating lens operable to receive the beam of infrared radiation from the source and to collimate the radiation within the beam.

14. (Original) The sensor of Claim 1, further comprising a focusing lens operable to focus the beam of infrared radiation to the detector.

15. (Original) The sensor of Claim 1, wherein each filter receives substantially a one half portion of the beam of infrared radiation.

16. (Original) The sensor of Claim 1, wherein the chopper is implemented with at least one liquid crystal device.

17. (Cancelled)

18. (Previously Amended) A method of detecting an infrared absorbing subject gas in a gas mixture, comprising:

generating a beam of infrared radiation with a light source;

filtering a first portion of the beam of infrared radiation, using a first filter, which passes a wavelength of radiation known to be attenuated by transmission through the subject gas;

filtering a second portion of the beam of infrared radiation, using a second filter, which passes a wavelength of radiation known to not be significantly attenuated by transmission through the subject gas;

wherein the filters are arranged immediately adjacent each other to form a cross-sectional polygon-shaped geometry having an inner filter and an outer filter;

wherein the filters are equidistant from the light source;

using a chopper to selectively and in succession block and pass radiation from the first and second filters, the chopper comprising a stationary array of light modulating elements that are controllable in two sections to alternately block and pass the radiation;

wherein the sections of the array have the same geometry as the inner and outer filter; and

detecting radiation passed through the chopper.

19. (Cancelled)

20. (Cancelled)

21. (Original) The method of Claim 18, wherein the first filter is sensitive to a wavelength that attenuates radiation through carbon dioxide.

22. (Original) The method of Claim 18, wherein the second filter is selective to a wavelength of about 3.9 micrometers.

23. (Original) The method of Claim 18, wherein the first filter is sensitive to a wavelength that attenuates radiation through water vapor.

24. (Original) The method of Claim 18, wherein the first filter is sensitive to a wavelength that attenuates radiation through gaseous ammonia.

25. (Original) The method of Claim 18, wherein each filter receives substantially a one half portion of the beam of infrared radiation.

26. (Original) The method of Claim 18, wherein the chopper is implemented with at least one liquid crystal device.